

## REMARKS

Claim 17 is pending in this application. By this Response, the claim has not been amended. Attached hereto is a complete listing of all the pending claims with their current status listed parenthetically.

### **Rejection Under 35 U.S.C. § 103(a)**

In paragraphs 1 and 2 of the Office Action, claim 17 is rejected as unpatentable under 35 U.S.C. § 103(a) over U.S. patent 5,677,927 ("Fullerton") in view of U.S. Patent 6,243,372 ("Petch") and further in view of U.S. patent 6,133,876 ("Fullerton II") Applicant respectfully traverses this rejection.

The Examiner's Section 103 rejection combines three references, Fullerton, Petch and Fullerton II. Because a modification to the prior art is required to support this 35 U.S.C. section 103 rejection, an appropriate motivation to modify must be set forth in order to establish a *prima facie* case of obviousness. See, *In re Fritch*, 972 F.2d 1266 (Fed. Cir. 1992). The Examiner states the motivation to modify as follows:

Therefore for an application, it would have been obvious for one skilled in the art, at the time of the invention was made [*sic*], within his skills, to implement the base station in Fullerton et al system [*sic*] to manage synchronizations between the first mobile unit and the second mobile unit, as taught by Petch et al, by synchronizing clocks of the first and second mobile stations with the clock of the base station (as being a master clock) in such a way that such clock synchronization would initiate the clocks **prior to ultra wide-band spread spectrum "impulse radio" being deployed into operation**, as taught by Fullerton et al II, so that a network-wide synchronization among the base station and first and second mobile units would be established and maintained **for optimal operation of the cellular wireless system**, e.g., to minimize interference problems otherwise caused by non-synchronized base and/or mobile station transmissions in the same cell (see Petch et al, col. 1, lines 40-45). [emphasis added]

In an attempt at clarity, Applicant interprets the above motivation as follows:

First the Examiner combines Fullerton and Petch:

"to implement the base station in Fullerton et al system [*sic*] to manage synchronizations between the first mobile unit and the second mobile unit, as taught by Petch et al by synchronizing clocks of the first and second mobile stations with the clock of the base station"

So now the mobile units are synchronized with each other and with the base station.

Then the motivation continues:

"such clock synchronization would initiate the clocks **prior to ultra wide-band spread spectrum "impulse radio" being deployed into operation**" as taught by Fullerton et al II, so that a network-wide synchronization among the base station and first and second mobile units would be established and maintained **for optimal operation of the cellular wireless system.**"

So there is now an optimally operating cellular wireless system. Why deploy ultra-wideband "impulse radio" at all? If you have an optimally operating cellular wireless system, why do you need to deploy ultra-wideband "impulse radio"?

Put differently, what purpose does the ultra-wideband "impulse radio" serve? Some type synchronization? But Petch teaches a synchronization method for a cellular network. Why would Petch need **another** synchronization method on top of the one he is already using? Especially one that uses a completely different, and totally incompatible communication technology (*i.e.*, ultra-wideband technology).

Where is the teaching or suggestion in Petch to use a second, completely different communication technology for the purpose of providing another synchronization method?

In fact, Petch does not contain such a teaching, as it is ridiculous for a reference that teaches a new synchronization method to teach employing a second synchronization method in addition to its own.

However, this is exactly what the Examiner is proposing: Take a reference that teaches a first synchronization method, and then add an additional, second synchronization method.

The Examiner also proposes to combine "the base station in Fullerton et al system [*sic*] to manage synchronizations between the first mobile unit and the second mobile unit, as taught by Petch et al."

However, Fullerton teaches communication using ultra-wideband communication technology, and Petch teaches conventional cellular communication technology. These two communication technologies are completely incompatible. Specifically, Fullerton teaches ultra-wideband, or impulse radio communication, which uses discrete electromagnetic pulses that may occupy bandwidths spanning hundreds of megahertz. Fullerton teaches Gaussian monocycles having: a 0.5 nanosecond pulse width; a 2 gigahertz center frequency; and which occupy a bandwidth of approximately 160% of the center frequency (*i.e.*, **3.2 gigahertz**) [col. 8, lines 24-57].

In contrast, Petch teaches conventional communication that uses a substantially continuous sinusoidal carrier wave that operates at specific, assigned radio frequency channels. Specifically, Petch teaches methods and apparatus for synchronization in a wireless network where the wireless network is a conventional cellular network that access a conventional public switched telephone network (col. 1, lines 11-22). As is well known, conventional cell phones employ a continuous carrier wave at a specific frequency, such as 700 MHz, or 800 MHz, and generally have about a **1.5 MHz bandwidth**.

How would a Petch cell phone, looking for a 1.5 MHz-wide continuous carrier wave signal, receive a 3.2 GHz-wide series of pulses? How would a Fullerton receiver, looking for discrete electromagnetic pulses, receive a continuous carrier wave?

Because any attempt to combine these references results in an inoperable combination, and/or (take your choice), because the principal of operation of either reference would have to be completely changed during any attempted combination with the other, Applicant submits that there is no suggestion or motivation to combine these references.

### **Conclusion**


Applicant believes that this Response has addressed all items in the Office Action and now places the application in condition for allowance. Accordingly, issuance of claim 17 at an early date is solicited. Should any issues remain unresolved, the Examiner is invited to telephone the undersigned.

Respectfully submitted,

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